NVIDIA Quadro FX 560M installation instructions

HP ProLiant xw460c Blade Workstation

The HP KD059AA After Market Option (AMO) kit contains the low-profile NVIDIA Quadro FX 560M graphics board. On a blade workstation that already contains a low-profile Quadro FX 560M board, a dual-graphics configuration can be created by installing a second Quadro FX 560M board. Because each Quadro FX 560M supports two monitors, incorporating two Quadro FX 560M boards in a blade workstation supports four monitors.

Support for dual-graphics is provided on Microsoft Windows XP Professional only—dual-graphics is not currently supported on Linux. In installing a second Quadro FX 560M, the following configuration guidelines must be followed:

● If the blade workstation already contains another type of Quadro FX graphics board, such as the Quadro FX 1600M, a Quadro FX 560M cannot be installed—two dissimilar graphics boards are not supported. Step 1 describes how to determine the type of graphics board currently installed in your blade workstation.

● There are two versions of the Quadro FX 560M graphics board—An earlier high-profile Quadro FX 560M board that shipped on blade workstation until approximately January, 2008, and a low-profile Quadro FX 560M board that began shipping on blade workstations subsequently. The Quadro FX 560M board in the HP KD059AA AMO kit is a low-profile board, and can only be installed in a blade workstation that contains another low-profile Quadro FX 560M. Step 3 describes how to determine if your blade workstation has a low-profile or high-profile Quadro FX 560M board installed.

To support dual-Quadro FX 560M graphics in a blade workstation that contains a high-profile Quadro FX 560M board, the high-profile board must be replaced by a low-profile Quadro FX 560M prior to adding a second low-profile Quadro FX 560M board. As noted previously, the HP KD059AA AMO kit contains the low-profile board.

⚠️ **WARNING!** The NVIDIA Quadro FX 560M board can only be installed in the HP ProLiant xw460c Blade Workstation. This board is not compatible with the HP ProLiant BL460c Server Blade nor any other server blade—installing this board in a server blade will cause the server blade to malfunction.

💡 **NOTE:** For a version of these instructions that may be more current than this document, see the HP website [http://www.hp.com/support/xw460c_manuals](http://www.hp.com/support/xw460c_manuals). On this website, you will also find the document *Administrator’s Guide for Microsoft Windows XP on the HP Blade Workstation Solution: HP ProLiant xw460c Blade Workstation*.

HP recommends that you refer to the *Administrator’s Guide* as you install the graphics card and its driver.
HP KD059AA AMO kit contents

- Low-profile NVIDIA Quadro FX 560M graphics board
- Regulatory Compliance Notices
- Warranty
- Material declaration for China
- Installation instructions (this document).

**NOTE:** This AMO kit does not contain a graphics driver CD-ROM. The graphics driver is downloaded from [http://www.hp.com](http://www.hp.com) as described in Step 2 below.

**NOTE:** To support dual-Quadro FX 560M graphics, a recent version of Remote Graphics Software (RGS) is required. Specifically, RGS 5.1.1 or later is required, as described in Step 6 below.

Observe warnings and cautions

⚠️ **WARNING!** ✓ Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

⚠️ **WARNING!** ✓ Any surface or area of the equipment marked with these symbols indicates the presence of an electrical shock hazard. To reduce the risk of injury from electrical shock, do not open any enclosed area.

⚠️ **WARNING!** To reduce the risk of electric shock or damage to your equipment:
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.
- Disconnect power from the equipment by unplugging the power cord from the electrical outlet.

⚠️ **WARNING!** To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation, setup, posture, and health and work habits for computer users, and provides important electrical and mechanical safety information. This guide is located on the Web at [http://www.hp.com/ergo](http://www.hp.com/ergo) and/or on the documentation CD if one is included with the product.

⚠️ **CAUTION:** Static electricity can damage the electronic components of the workstation. Before beginning these procedures, be sure you are discharged of static electricity by briefly touching a grounded metal object.

⚠️ **CAUTION:** To prevent damage to this system, observe the following Electro Static Discharge (ESD) precautions while performing the system parts removal/replacement procedures:
- Work on a static-free mat.
- Wear a static strap to ensure that any accumulated electrostatic charge is discharged from your body to the ground.
- Create a common ground for the equipment you are working on by connecting the static-free mat, static strap and peripheral units to that piece of equipment.
NOTE: HP accessories are for use in HP workstation products. They have been extensively tested for reliability and are manufactured to high quality standards. HP, therefore, warrants only those accessories that are manufactured or sold by HP.

Step 1 — Determine the graphics configuration of your HP ProLiant xw460c Blade Workstation

NOTE: These installation instructions assume that you are using the Remote Console feature of iLO 2 to interact with the blade workstation.

The first step is to determine what graphics board is currently installed in your blade workstation. To do this, select the following from the start menu: Control Panel>Display>Settings>Advanced. This brings up the dialog shown below. The title bar of this particular dialog shows that a Quadro FX 1600M board is installed in the blade workstation. As noted earlier, the Quadro FX 560M is not compatible with other types of graphics boards. In this case, to achieve dual Quadro FX 560M graphics, the Quadro FX 1600M would need to be removed, and two low-profile Quadro FX 560M boards would need to be installed.

Even if the title bar of the above dialog on your blade workstation indicates that a Quadro FX 560M is installed, it may not be the correct revision of the graphics board—in other words, a high-profile Quadro FX 560M may be installed instead of the required low-profile Quadro FX 560M. If the above dialog indicates that a Quadro FX 560M is installed, you have two options:

1. If you're not sure which Quadro FX 560M board is installed, you can remove the blade workstation from the rack, remove the access panel, and visually determine which type of Quadro FX 560M board is installed. However, even if you have the correct (low-profile) version, the second Quadro FX 560M cannot be installed until after the BIOS is updated in Step 2. This will require reinserting the blade workstation in the rack in order to update the BIOS, followed by removing it again to install the second Quadro FX 560M.

2. The other option is to not remove the blade workstation from the rack at this time (in order to visually determine which type of Quadro FX 560M graphics board is installed). Instead, you can proceed to Step 2 to update the BIOS and the NVIDIA graphics driver. Following these updates, you can open up the blade workstation and determine which type of Quadro FX 560M graphics board is installed. If you have a low-profile Quadro FX 560M installed, you can then install the second Quadro FX 560M from the AMO kit.

The advantage of the second option is that the blade workstation only needs to be removed from the rack once for visual inspection. The disadvantage of the second option is that, after you update the BIOS
and graphics driver, you may find in Step 3 that the already-installed Quadro FX 560M is an incompatible high-profile Quadro FX 560M.

Because updating the BIOS and NVIDIA graphics driver is often beneficial in terms of addressing other issues, HP recommends that you not remove and inspect the blade workstation at this time—that you instead proceed to Step 2 to update the BIOS and NVIDIA graphics driver.

**Step 2 — Ensure that the correct BIOS and NVIDIA graphics driver are installed**

Depending on when your blade workstation shipped to you, it may already contain the required BIOS and NVIDIA graphics driver. In this step, you’ll determine which BIOS and graphics driver are installed, and update them if necessary.

To determine the BIOS version on your blade workstation, reboot the blade workstation, and press the **F9** key on your keyboard when prompted during booting. The HP BIOS version number will be displayed on the right side of the ROM-Based Setup Utility screen. The required BIOS is “V03 10/10/07” (which indicates the month/day/year). If your BIOS version is earlier than this, you’ll need to update to this later version.

Complete the boot process until Windows starts up to determine the version of the NVIDIA graphics driver. Dual-Quadro FX 560M graphics requires an NVIDIA driver version of 160.02 or later. Your HP ProLiant xw460c Blade Workstation may already have the correct graphics driver installed, depending on when your blade workstation shipped. To determine the graphics driver version, open Windows Device Manager, and then open the properties dialog to the current NVIDIA display adapter, as shown below.

For the above blade workstation, the NVIDIA driver version is 6.14.10.8662—therefore, an updated Windows XP graphics driver is required. To update the BIOS or the NVIDIA graphics driver, perform the following steps:

1. Go to [http://www.hp.com/support/xw460c](http://www.hp.com/support/xw460c)
2. Click on **Download drivers and software**
3. Select the operating system **Microsoft Windows XP Professional**

4. To update the BIOS, click on BIOS, and then click Download for the BIOS version labeled **10.10.2007**. Save the softpaq on the blade workstation, and then double-click on the softpaq to begin the BIOS installation process.

5. To update the NVIDIA graphics driver, scroll further down the page to Driver – Graphics – Nvidia, and find the **NVIDIA Quadro Professional Driver for Blade Workstations**, specifically version 160.02 or later. Click Download, save the softpaq on the blade workstation, and then double-click on the softpaq to begin the NVIDIA driver installation process.

**Step 3 — Prepare the blade workstation**

In this step, the blade workstation is prepared for installation of the second Quadro FX 560M graphics board. If a low-profile Quadro FX 560M graphics board is already installed, it is temporarily removed. If a different graphics board is currently installed, such as the Quadro FX 1600M or a high-profile Quadro FX 560M, that board is permanently removed in preparation for installing two low-profile Quadro FX 560M graphics boards. In this latter situation, two KD059AA AMO kits would be needed to create a dual-graphics configuration.

Removal of the blade workstation from the rack and removal of the blade workstation access panel is described in the document **HP ProLiant BL460c Server Blade Maintenance and Service Guide**, available at [http://www.hp.com/support/xw460c_manuals](http://www.hp.com/support/xw460c_manuals). Follow the instructions in the **Maintenance and Service Guide** to:

1. Power down the blade workstation
2. Remove the blade workstation from the rack
3. Remove the blade workstation access panel

The picture below shows the graphics board that you’ll see if a low-profile Quadro FX 560M board is installed.
This board needs to be temporarily removed to provide access to the connector beneath this board. To remove this board, unscrew the three captive retaining screws as shown below.
If a graphics board similar in appearance to the graphics board shown below is installed, you’ll need to permanently remove it in preparation for installing two low-profile Quadro FX 560M graphics boards. To remove the existing graphics board, unscrew the three captive retaining screws as shown above.

**Step 4 – Install the two Quadro FX 560M graphics boards**

In this step, the two low-profile Quadro FX 560M graphics boards are installed. These boards are identical and can be inserted in either order. Connect the first board to the lower connector using the three captive set screws as shown below—ensure that the connector on the graphics board is firmly seated in the connector on the motherboard.
Connect the second board to the upper connector using the three captive set screws as shown below. Ensure that the graphics board connector is firmly seated in the motherboard connector.
Step 5 – Reinstall the blade workstation

Reinstall the blade workstation in the rack by performing the following steps:

1. Install the blade workstation access panel.
2. Install the blade workstation in the rack.
3. Power up the blade workstation, and select Setup Mode during the boot process. This is in preparation to installing the required version of Remote Graphics Software in Step 6, and assumes the continued use of the iLO 2 Remote Console.

Step 6 – Install RGS 5.1.1

The next step is to install the Workstation version of the RGS 5.1.1 (or later) Sender, which is required to support Quadro FX 560M dual-graphics. If you have purchased RGS update subscription services or RGS software assurance, you may download RGS Workstation 5.1.1 (or later) for free from your subscription website. Otherwise, you’ll need to purchase RGS Workstation 5.1.1 (or later) from http://www.hp.com/go/softwaredepot.

Once you have downloaded RGS, follow the instructions in the RGS User Guide to install the RGS Sender on your blade workstation.

Step 7 — Verify RGS access to the blade workstation

At this point, the blade workstation should be accessible using RGS from a client computer. Follow your normal RGS connection process to verify that an RGS connection can be made to the dual-graphics blade workstation.